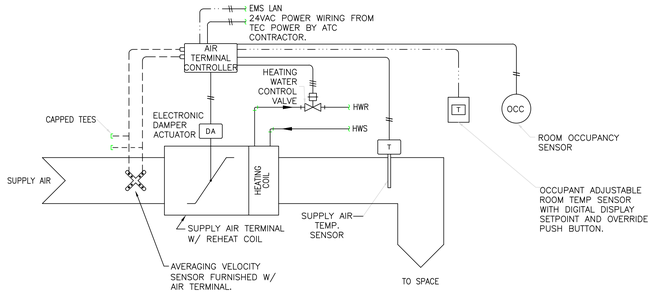


VAV SUPPLY AIR TERMINAL UNIT WITH HOT WATER REHEAT SEQUENCE OF OPERATION:

MODE OF OPERATION:
THE SUPPLY AIR TERMINAL UNIT MODE OF OPERATION SHALL BE EITHER OCCUPIED OR UNOCCUPIED BASED ON A SCHEDULE COMMUNICATED FROM THE EMS, AN OPERATOR OVERRIDE COMMAND FROM THE EMS, AN OCCUPANCY OVERRIDE SIGNAL FROM THE SUPPLY AIR TERMINAL UNIT SPACE TEMPERATURE SENSOR, OR ROOM OCCUPANCY SENSOR (REFER TO TERMINAL SCHEDULE FOR TERMINAL UNITS WITH OCCUPANCY SENSORS).

OCCUPIED MODE:
THE SPACE TEMPERATURE SETPOINT SHALL BE ADJUSTABLE BY THE OCCUPANT AT THE THERMOSTAT BETWEEN A MINIMUM OF 68F AND A MAXIMUM OF 75.

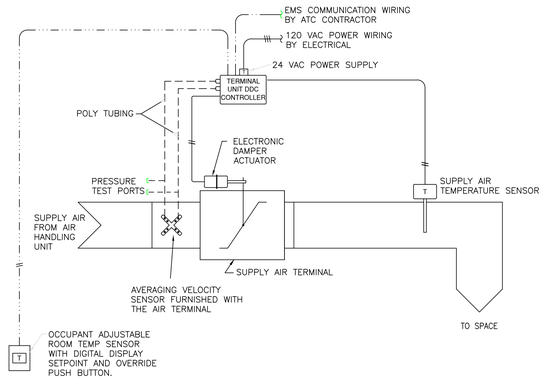
ON A CALL FOR COOLING, THE SUPPLY AIR TERMINAL UNIT DAMPER SHALL BE MODULATED BETWEEN THE COOLING MINIMUM AND THE COOLING MAXIMUM AIR FLOW RATES AS SCHEDULED.

ON A CALL FOR HEATING, THE SUPPLY AIR TERMINAL UNIT DAMPER SHALL BE MODULATED BETWEEN THE HEATING MINIMUM AND THE HEATING MAXIMUM AIR FLOW RATES SCHEDULED AND THE HEATING WATER CONTROL VALVE SHALL BE MODULATED AS REQUIRED TO MAINTAIN THE SPACE TEMPERATURE AT SETPOINT.

UNOCCUPIED MODE:
THE SUPPLY AIR TERMINAL UNIT DAMPER SHALL BE CLOSED AND THE HEATING COIL CONTROL VALVE SHALL BE CLOSED.

IN THE EVENT A SPACE TEMPERATURE IS DETERMINED TO BE BELOW THE UNOCCUPIED HEATING TEMPERATURE SETPOINT OR ABOVE THE UNOCCUPIED COOLING TEMPERATURE SETPOINT, AS SENSED BY THE SUPPLY AIR TERMINAL UNIT SPACE TEMPERATURE SENSOR, THE SUPPLY AIR TERMINAL UNIT SHALL RETURN TO LIMITED OCCUPIED OPERATION. THE LIMITED OCCUPIED OPERATION SHALL MODULATE THE SUPPLY AIR TERMINAL UNIT DAMPER AND THE HEATING VALVE TO MAINTAIN UNOCCUPIED SETPOINTS. WHEN THE SPACE TEMPERATURE IS BACK WITHIN THE UNOCCUPIED TEMPERATURE RANGE THE SUPPLY AIR TERMINAL UNIT SHALL RETURN TO UNOCCUPIED CONDITION.

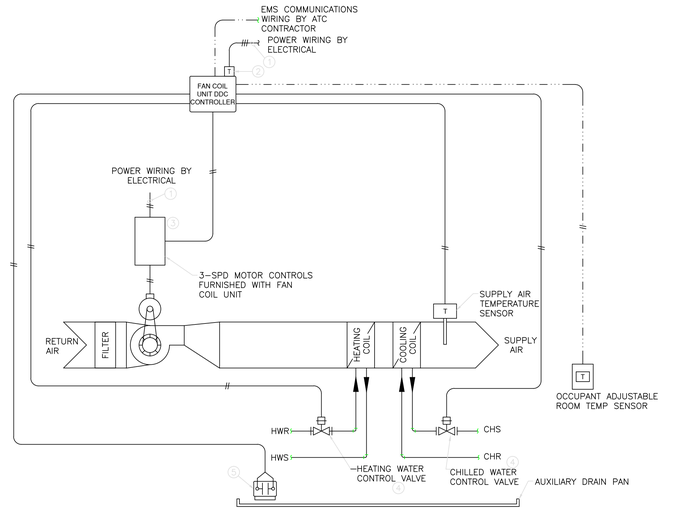
1 AIR TERMINAL CONTROL DIAGRAM
NOT TO SCALE



SUPPLY AIR TERMINAL SEQUENCE OF OPERATION:

ROOM THERMOSTAT SETPOINT SHALL BE ADJUSTABLE BY THE OCCUPANT AT THE THERMOSTAT. ON A CALL FOR COOLING, THE TERMINAL DAMPER SHALL BE MODULATED BETWEEN MINIMUM AND MAXIMUM AIR FLOW RATES SCHEDULED AS REQUIRED TO MAINTAIN THE SPACE TEMPERATURE AT THE SETPOINT.

2 TYPICAL COOLING ONLY SUPPLY AIR TERMINAL CONTROL DIAGRAM
NOT TO SCALE



HEATING AND COOLING FAN COIL UNIT SEQUENCE OF OPERATION:

FAN COIL UNIT CONTROLLER SHALL SEQUENCE THE FAN SPEED (OFF, LOW, MEDIUM, AND HIGH) AND CYCLE THE HEATING AND COOLING VALVES AS REQUIRED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT (ADJUSTABLE).

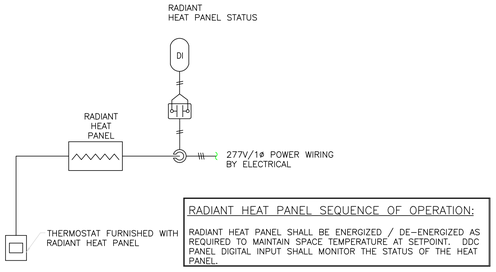
MOISTURE SENSOR ON HORIZONTAL UNITS SHALL STOP FAN AND SEND AN ALARM TO THE EMS ON DETECTION OF MOISTURE IN AUXILIARY DRAIN PAN.

A FILTER ALARM SHALL BE GENERATED AT THE EMS WHEN UNIT RUN TIME EXCEEDS THE PRESET NUMBER OF HOURS PER FILTER CHANGE.

3 KEYED NOTES:
1. POWER WIRING BY ELECTRICAL.
2. CONTROL TRANSFORMER FURNISHED AND INSTALLED BY ATC CONTRACTOR.
3. FAN COIL UNIT FURNISHED WITH 3–SPEED FAN CONTACTORS FACTORY MOUNTED AND WIRED FOR 24VAC OPERATION FROM 3–SPEED SWITCH OR UNIT CONTROLLER.
4. CONTROL VALVES ARE FURNISHED BY ATC CONTRACTOR AND INSTALLED BY MECHANICAL CONTRACTOR. VALVES ARE MODULATING WITH 24 VAC OPERATORS.

MOISTURE SENSOR FURNISHED AND INSTALLED BY ATC CONTRACTOR. NOT APPLICABLE TO VERTICAL CONFIGURATION FAN COIL UNITS.

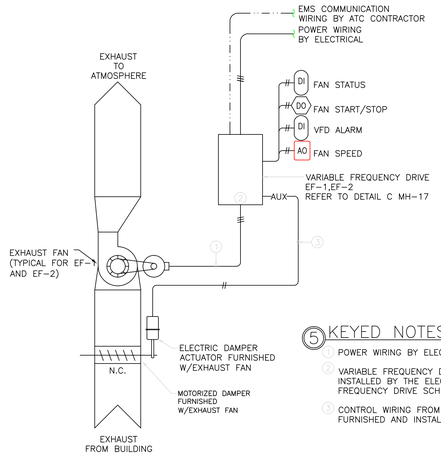
3 TYPICAL HEATING AND COOLING 120V FAN COIL UNIT CONTROL DIAGRAM
NOT TO SCALE



RADIANT HEAT PANEL SEQUENCE OF OPERATION:

RADIANT HEAT PANEL SHALL BE ENERGIZED / DE–ENERGIZED AS REQUIRED TO MAINTAIN SPACE TEMPERATURE AT SETPOINT. DDC PANEL DIGITAL INPUT SHALL MONITOR THE STATUS OF THE HEAT PANEL.

ISOLATION PATIENT ROOM TOILET
4 RADIANT HEAT PANEL CONTROL DIAGRAM
NOT TO SCALE

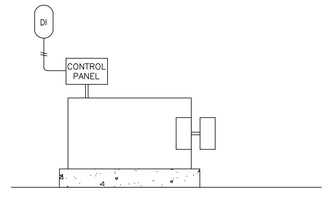


5 KEYED NOTES:
1. POWER WIRING BY ELECTRICAL.
2. VARIABLE FREQUENCY DRIVE FURNISHED BY ATC CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. REFER TO VARIABLE FREQUENCY DRIVE SCHEDULE AND CONTROL DETAIL C.
3. CONTROL WIRING FROM VFD TO DAMPER ACTUATOR SHALL BE FURNISHED AND INSTALLED BY ATC CONTRACTOR.

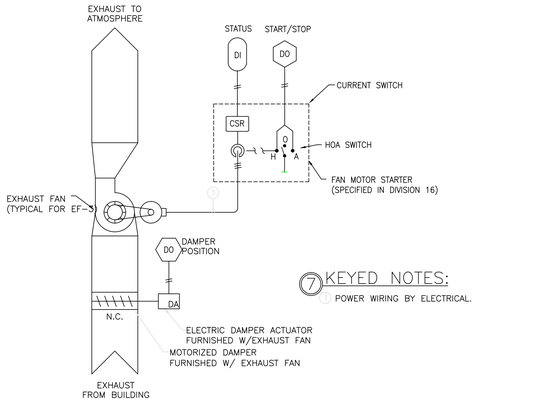
GENERAL EXHAUST FAN SEQUENCE OF OPERATION:

EXHAUST FAN SHALL BE STARTED AND STOPPED BY DDC PANEL DIGITAL OUTPUT. EXHAUST FAN SHALL TYPICALLY BE IN OPERATION AT ALL TIMES. MOTORIZED DAMPER SHALL OPEN ON FAN STARTUP AND SHALL CLOSE ON FAN SHUTDOWN. TAB CONTRACTOR TO ADJUST VFD TO DESIGN AIRFLOW.

5 GENERAL EXHAUST FAN CONTROL DIAGRAM
NOT TO SCALE



6 CONDENSATE RETURN PUMP
NOT TO SCALE



7 KEYED NOTES:
1. POWER WIRING BY ELECTRICAL.

GENERAL EXHAUST FAN SEQUENCE OF OPERATION:

EXHAUST FAN SHALL BE STARTED AND STOPPED BY DDC PANEL DIGITAL OUTPUT. EXHAUST FAN SHALL TYPICALLY BE IN OPERATION AT ALL TIMES. MOTORIZED DAMPER SHALL OPEN ON FAN STARTUP AND SHALL CLOSE ON FAN SHUTDOWN.

7 GENERAL EXHAUST FAN CONTROL DIAGRAM
NOT TO SCALE

USE APPLICABLE DETAILS

Revisions | Date

Approved: Medical Center Director

Approved: Associate Director

Approved: Chief Of Staff

Seals

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Drawing Title: DETAILS - HVAC

Project Title: JLM MEMORIAL VETERAN'S HOSPITAL - EXPAND MICU

Date: NOV 2013

Project No.: XXXXX

Building Number: 1-JLM | Checked: JM | Drawn: P&D

Location: CAVHS LITTLE ROCK, AR

DRAWING NO.: MH-9R

Dwg 9 Of 12

Office of Facilities

DEPARTMENT OF VETERANS AFFAIRS